ABSTRACT OF THE DISCLOSURE

A receiver includes a pre-correlation filter that forms an image of the average chip shape of a received signal over a specified period of time. The filter includes an array of complex accumulation registers that accumulate measurements that are associated with signal samples from specific ranges of locations, or code chip phase angles, along a spread-spectrum chip. Using the accumulated measurements, the receiver estimates the location of the chip transitions in a direct path signal component. The receiver may thereafter change the starting point, size and number of ranges, such that the accumulation registers accumulate more detail from the chip edges. The receiver in addition may compare the accumulated measurements with a reference pulse shape to determine if any interference is present in the received transmission that will distort ranging information calculated from the received signal.